

AGNIHOTRI COLLEGE OF ENGINEERING, WARDHA**Department of Basic Science And Humanities****FIRST SEMESTER****BESI-1T Mathematics - 1**

CO1	. Analyze real world scenarios to recognize when derivatives or integrals are appropriate, formulate problems about the scenarios, creatively model these scenarios (using technology, if appropriate) in order to solve the problems using multiple approaches, judge if the results are reasonable, and then interpret and clearly communicate the results
CO2	another person gain insight into the situation
CO3	Apply knowledge of mathematics, physics and modern computing tools to scientific and engineering problems
CO4	Develop an ability to identify, formulate and/or solve real world problems
CO5	Understand the impact of scientific and engineering solutions in a global and societal context.

BESI-2T Applied Physics

CO1	Apply concepts in interference and diffraction to solve relevant numerical problems and to relate to relevant engineering applications
CO2	Learn the basic concepts of dual nature of matter and wave packet and apply them to analyze various relevant phenomena and to solve related numerical problems
CO3	Recall the basic concepts of crystal structure and apply them in solving numerical problems based on them and in relating to applications for determination of crystal structure.
CO4	Relate the basic idea of total internal reflection to the propagation of light in an optical fiber and make use of the fiber concepts to solve numerical problems and relate to applications in engineering
CO5	Find how to extend the basic concepts of motion of charged particles in electric magnetic fields to solve numerical problems and to relate to applications in electron optic devices and CRO

BESI-3T Energy and Environment

CO1	Obtain the knowledge of solid and gaseous fuels and their Calorific Value determination
CO2	Recognize the type of liquid fuels and their uses in IC engines.
CO3	Apply the knowledge about the use of alternative sources of energy& utilize solid waste as energy source

CO4	Analyze the impacts of Industrial pollution and its control
CO5	Develop innovative ideas for use of advanced materials in sustainable development
BESI-4T	Communication Skill
CO1	student will be able to overcome barriers of communication.
CO2	Student will acquire public speaking skills and handle group situations professionally.
CO3	student will be able to comprehend passages and compose paragraphs.
CO4	student will be able to construct error free and meaningful sentences in English.
CO1	Curves.
CO2	The learner will be able to understand projections of different types, planes(2D) & solids(3D) and will be able to draw different views of plane & solids.
CO3	The learner will be able to understand concept of sectioning & development of lateral surfaces of solid & will be able to represent it.
CO4	Apply the visualization skill to draw a simple isometric projection view from given orthographic views
BESI-2P	Applied Physics
CO1	Apply concepts in interference and diffraction to solve relevant numerical problems and to relate to relevant engineering applications
CO2	Learn the basic concepts of dual nature of matter and wave packet and apply them to analyze various relevant phenomena and to solve related numerical problems
CO3	Recall the basic concepts of crystal structure and apply them in solving numerical problems based on them and in relating to applications for determination of crystal structure.
CO4	Relate the basic idea of total internal reflection to the propagation of light in an optical fiber and make use of the fiber concepts to solve numerical problems and relate to applications in engineering
CO5	Find how to extend the basic concepts of motion of charged particles in electric magnetic fields to solve numerical problems and to relate to applications in electron optic devices and CRO
BESI-3P	Energy and Environment
CO1	The practical knowledge of handling chemicals.
CO2	Analysing a broad foundation in energy and environment that stresses scientific reasoning and analytical problem solving with a molecular perspective.
CO3	Experimental techniques using modern instrumentation.
BESI-4P	Communication Skill
CO1	Student will be able to overcome listening barriers of communication.
CO2	Students will be able to enhance their comprehending skill & speaking skills.
CO3	Students will be able to give effective presentations & handle group situations.
CO5	Students will be able to use figurative language in their formal & informal communication.
BESI-5P	Engineering Graphics
CO1	Draw the fundamental objects using basic rules & able to construct lines, simple geometries construct the various engg. Curves using the drawing instruments .
CO2	Draw the two dimensional and three dimensional objects precisely using drawing instruments
CO3	Draw the development of lateral surfaces for cut section of geometrical solids precisely using drawing equipments
CO4	Draw the simple isometric projection from given orthographic view using drawing equipments
SECOND SEMESTER	
BESII-1	Mathematics – II

CO1	Analyze real world scenarios to recognize when integrals are appropriate, formulate problems about the scenarios, creatively model these scenarios (using technology, if appropriate) in order to solve the problems using multiple approaches, judge if the results are reasonable, and then interpret and clearly communicate
CO2	Define and understand the geometry of vector differential operators and line and surface integrals.
CO3	Explain and apply principles of study design and data collection
CO4	Develop an ability to identify, formulate and/or solve real world problem
CO5	Understand the impact of scientific and engineering solutions in a global and societal context
BESII-2T	Advanced Engineering Material
CO1	Learn the concept of formation of energy bands and to classify solids on its basis.
CO2	Identify and explain different types of diodes, transistors and its applications
CO3	Learn the concepts of magnetism and superconductivity, classify and analyze various types of magnetic and superconducting materials
CO4	Learn and explain quantum transitions and apply it to working of lasers.
CO5	Learn the concept of nano materials and compare its properties with those of bulk materials
BESII-3T	Applied Chemistry
CO1	Rationalize the periodic properties and analyze the Microscopic Chemistry in terms of atomic and molecular orbital
CO2	Rationalize bulk properties and processes using thermodynamic processes & understand the causes of corrosion, its consequences and methods to minimize corrosion.
CO3	Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques.
CO4	Apply the principles of green chemistry in designing alternative reaction methodologies to minimize hazards and environmental degradation
CO5	Know about treatment of water and its applications in industry.
BSEII-4T	Computational Skill
CO1	To demonstrate the use of "while" control structure
CO2	To demonstrate the use of "do..while" control structure
CO3	To demonstrate the use of "for" control structure
CO4	To demonstrate the use of "break and continue" control structure
BSE2-6T	Basics of Electrical Engineering
CO1	To study electrical circuits
CO2	Study of different magnetic circuits
CO3	Study of different magnetic circuits
CO4	To study basic construction of transformer.
BSE2-7T	Engineering Mechanics
CO1	Student will be able to find effect of force on a body
CO2	Student will be able to analyse the effect of a system of forces on a given body with the concept of equilibrium & free body diagram.
CO3	Student will be able to calculate centroid / CG & MI
CO4	Student will be able to solve problem of connected bodies by virtual work principles
CO5	Student will be able to solve problem of connected bodies by work, energy, D-Alemberts principle.
CO6	Student will be able to solve problem of connected bodies by impact impulse.
BSE2-8T	Indian Culture and Constitution
CO1	Student will become aware of Indian culture and civilization.
CO2	Student will understand Industrial work-culture.
CO3	Student will be sensitized towards professional ethics
CO4	Student will understand Indian constitution and governance of country.
CO5	Student will be able to understand the structure & system of work organizations
BSE2-5P	Workshop Practices
CO1	Read and interpret job drawing & plan operations
CO2	Identify & select proper material, tools, equipments, machines & proper operational parameters.
CO3	Set tools, work piece, and machines for desired operation.

CO4

complete job of carpentry, Fitting, Welding & Smithy as per job drawing.

CO5	Use safety equipment and follow safety procedures during operation.
CO6	Inspect the job for confirming desired dimensions and shape
BSE2-2P	Advanced Engineering Material (Practical)
CO1	Learn the concept of formation of energy bands and to classify solids on its basis.
CO2	Identify and explain different types of diodes, transistors and its applications
CO3	Learn the concepts of magnetism and superconductivity, classify and analyze various types of magnetic and superconducting materials
CO4	Learn and explain quantum transitions and apply it to working of lasers.
CO5	Learn the concept of nano materials and compare its properties with those of bulk materials
BSE2-3P	Applied Chemistry Laboratory
CO1	Measure molecular/system properties like, concentrations, surface tension, conductance of solutions etc.
CO2	Estimate the soluble impurities present in the given water sample.
CO3	Handle the different instruments used in chemistry laboratory.
BSE2-4P	Computational Skill
CO1	To study fundamentals of computer and operating system.
CO2	To study fundamentals of "C" language
CO3	To study fundamentals of Decision control Structure & Loop control Structure.
CO4	To study fundamentals of Two Dimensional array and pointers
CO5	To study fundamentals of Strings & functions